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ABSTRACT

This report contains two papers that resulted from the Multilevel Evaluation Systems (MES) Project. The first paper is "Political and Practical Issues in Improving School Boards' Use of Evaluation Data" by Joan Herman. The second paper is "Principals: Their Use of Formal and Informal Data" by Shari Golan and Jeanne Dreyfus. The MES Project consisted of interview studies involving school board members, superintendents, and school principals. The study was designed to determine the sources of information and standards used by these groups to judge the quality of their schools, their interpretation and use of formal tests, and preferences for report content and format. The research was the result of a collaborative project involving the University of California (Los Angeles) Center for Research on Evaluation, Standards, and Student Testing and participating district Research and Evaluation directors who conducted interviews with decision makers. The MES Project's multidisciplinary literature review and examination of district reporting practices were the bases for hypotheses about how principals use data in the real world and the variables that are likely to influence such use. The two papers presented here provide the results of interviews with school board members and with elementary and secondary school principals. Numerous data tables and graphs are included. (TJH)

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Center for Research on Evaluation, Standards, and Student Testing

Final Deliverable - January 1990

Multilevel Evaluation Systems Project

Results of Interview Studies

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Multilevel Evaluation Systems Project

Results of Interview Studies

Study Director: Joan Herman

Grant Number: OERI-G-86-0003

Center for the Study of Evaluation
Graduate School of Education
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Introduction

This report includes two papers which resulted from the Multilevel Evaluation System Project's interview studies.

The first paper, *Political and Practical issues in Improving School Boards' Use of Evaluation Data*, presents the results of interviews with school board members.

The second paper, *Principals: Their Use of Formal and Informal Data*, summarizes the results of interviews with elementary and secondary school principals.

Both papers were presented at the Annual Meeting of the California Educational Research Association. They currently are being reivsed for wider dissemination.

Political and Practical Issues in Improving School Boards' Use of Evaluation Data

Joan Herman
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Evaluation, Standards & Student Testing
CRESST

How do we make data useful for decisionmaking? For eons, it seems, many of us as evaluators have struggled with this question. We as data producers and data lovers see great potential for our efforts in improving educational policymaking and facilitating school improvement. Legislatures too, particularly in California, seem to agree on the power of evaluative information as they mandate school report cards, performance reports, and a full complement of tests. In the face of such optimism about the power of data, we see repeated evidence that the actual impact of our work is quite modest (Alkin, et al., 1979; Patton, 1986; Herman, 1987).

Clearly, simply proclaiming the value of our work is an insufficient strategy for assuring that it reaches that potential. In an attempt to design more effective strategies, we at CRESST had a minor insight: let's stop talking to ourselves about the value of our work, let's stop talking about hypothetical impact if people like us were in planning and decisionmaking roles in schools, and let's start talking and better understanding those who actually occupy those crucial roles in schools. We need to get inside the heads of real school decisionmakers and better understand where our data fits into their worlds. We need to design strategies that meet their needs, not our misconceptions about their needs.

With these perspectives in mind, we embarked on interview studies of school board members, superintendents, and school principals. Our questions were relatively simple: what sources of information do these groups really use to judge the quality of their schools, what standards do they use to arrive at their judgments; how do they make sense of and use the formal test data they receive, and what are their preferences for report content and format. In the process of answering these questions, we also developed interest in their basic affect toward and belief in testing.

The research was the result of a unique collaborative project between the UCLA Center for Research on Evaluation, Standards, and Student Testing (CRESST) and participating district R&E directors who conducted interviews with decisionmakers within their local districts. It was a collaboration which had direct benefits for everyone

involved. In the process of doing interviews, our colleagues gained visibility within their districts and the opportunity to better understand the needs of those they are supposed to be serving. And we gained key informants who are highly knowledgeable about local context and a very cost-effective data base about information use in a wide range of institutional settings. The nature of these settings and the specific methodology used in the project is described in the sections below, followed by a summary of results and their implications.

Methodology

The MLES project's multidisciplinary literature review and examination of district reporting practices were the basis for hypotheses about how principals use data in the real world and the variables which are likely to influence such use. These were the basis for the sample design and the interview protocol.

The Interview Protocol

The interview protocol was developed to examine questions and variables of interest and revised based on field test results. The final version had three parts:

Pre-interview. The pre-interview consisted of an introduction, a statement of purpose, a description of the general content of the interview, an assurance of anonymity, permission to tape the interview, and solicitation of clarifying questions.

Interview. The second part of the protocol contained the interview questions. The questions concerned the sources, criteria and application of information principals use to assess the quality of education in their schools. Other questions were about principals' interest in sub-groups test data, preferences for particular formats for test reports and additionally desired information. The final question asked principals how much they felt test data reflects what is important in schooling. Copies of the exact questions used are located in Appendix A.

Post-interview. The final section of the protocol consisted of questions for the interviewer (which were completed as soon as possible after the interview). This sheet had five comment areas--key themes, areas of concern, areas of confusion, personal reflections and suggestions for future interviews (see Appendix B).

The Subject Population

Twelve districts were selected for participation in the study to represent a range of socio-economic status levels, diversity with regard to ethnic composition, and a range of district sizes. Within each district, three principals and three board members were to be randomly selected for interviews. This paper focuses on the subsample of 27 board members who participated in the study.

Interview Procedures

Staff from the U.C.L.A. Center for Research on Evaluation, Standards, and Student Testing (CRESST) and directors of district research and evaluation offices were recruited and trained in study procedures. Training included discussion and practice in the use of the interview protocol as well as directions for randomly selecting respondents, and taping, summarizing and returning completed interviews. Interviewers then used the protocol to obtain data.

Each interviewee was first contacted by phone and asked to be involved in the study. Most interviews took approximately a half hour. All the interviews were tape recorded. The interviews were all conducted between May and September, 1989.

Interviewers summarized the results of their interview as soon as possible after each interview. Both the interviews summaries and tapes were turned over to the MLES staff. The MLES staff then coded and analyzed the results.

Analysis of the Data

Tape interviews were summarized and a code book was assembled and tested by four coders. Formal coding did not begin until there was one-hundred percent agreement on eight test interviews.

For the study reported in this paper simple frequencies were tabulated. Small sample sizes precluded analyses based on contextual variables and likewise limit the generalizability of results.

Results

Who were the School Board Respondents?

The respondents. Interviews were completed with 27 school board members from a total of ten school districts. The obtained sample was fairly evenly distributed between

those who were new to their school board roles (less than two years on their boards); those who and an intermediate level of experiences; and those whom we considered veteran school board members (six or more years on the board. (See Table 1)

Their school district context. Based on state definitions, two of the ten districts represented are classified as large city school systems, two as small school districts, and the remaining eight as mid-sized districts.

While the communities served by the districts are varied in SES levels, the majority are characterized on average as mid-level SES, with about one-quarter low SES and a single district serving a high SES community. The communities served are ethnically diverse.

The most recent results of the California Assessment Program give a sense of the achievement context in which our respondents operate. More than 40 percent serve in districts where students score below the state average in reading and in math.

In summary, although the respondents and their districts were mostly from Southern California, we believe they generally represent the typical district in the state. It should be noted, however, that clearly absent from our study, are small rural districts.

What Key Information Sources Are Used to Assess School Quality?

Table 2 and Graph 1 show the sources of information school board members most frequently mentioned in evaluating the quality of their schools. Note that although almost all respondents mentioned testing as an important source, only about half were familiar enough with testing to be able to name a specific kinds of test (e.g., CAP, state assessment, etc.).

The results in Table 2 and Graph 1 show a clear preference by school board members for qualitative, informal sources of information, often gained interpersonally. Consistent with both their often political roles and their positions as community liaisons, they rely heavily on feedback from parents, the community and the media. Such feedback apparently often comes on a "catch as catch-can" basis, e.g., conversations with checkout clerks, interactions during social gatherings, etc. For example, as one veteran board member put it, "I get a lot of information in the grocery store, on the street, from people who work in the district who would talk to me off the record and away from their job site."

School board members also highly value their own observations of classrooms and schools. Mentioned by almost three quarters of our respondents, this source also was the most likely of any source mentioned to considered critically important and heavily weighted in evaluations of school quality:

> The highest priority is going to a school--and checking the environment--the faculty and students and see how they are doing in the classroom.

> In some ways what I've found to be most valuable is the one-on-ones that I have as a board member out in the schools...primarily with students, with teachers, with administrators and observations...It's a real valuable source of information because so often, the information doesn't filter all the way to the board without that link.

> You see the kinds of effort the teachers are putting into their classrooms and I think that says a lot. If the classrooms are vibrant, and a lot of activity on the board--I think that's a good indicator that things are happening.

Many school board members, in addition, appear to rely highly on the opinions of professionals in their districts. Almost three-quarters depend on the superintendent or other district administrators for perspectives on school quality. As mentioned later in this paper, many appear highly dependent on the school professionals to summarize and interpret data for them. One board member noted, "As far as numbers, I couldn't tell you whether being in the 60th percentile is o.k. or not. I have to rely on seasoned administrators, including principals." In contrast, a small, vocal minority is highly skeptical of information and opinions offered by their school district staffs.

Drop-out rates, student grades, and results of special competitions and awards are valued by a sizeable minority of respondents. Relatively few pay attention to other more formal and quantitative information sources, e.g., attendance rates, teacher turnover, results of college entrance exams, formal surveys. It is of interest to note the low frequency of formal survey data, even though surveys were routinely administered in several of the sampled districts.

How Do School Board Members Judge Quality?

Based on test scores. Almost all respondents queried claim that they make determinations of school quality by looking for trends over time (see Table 3). Scores going up indicate that their schools are doing well, while scores going down indicate that there are problems. Said one Board

member, "If we've gone up, hopefully we've done the right thing. If we've gone down...lots of things could account for this."

Respondents generally seemed to have difficulty, however, in articulating how large a change actually indicated progress in either direction. Even those who were able to articulate specific criterion, however, did so only tentatively, as this veteran's comment indicates: "If we made anywhere from between a 10 to 20 percent jump each year--I think I'd be real happy...that's a guess."

Also common, reported by about three-quarters of board member respondents, is the use of the normative standard of how other schools or districts are performing. Board members check to see whether their students' scores are above, below, or even with similar schools or districts. As one board member put it, "Of course you look at test scores and compare one school with other similar ones to see if you're living up to expectations."

About half the respondents judge quality by looking to see whether students are scoring at or above the national or state average or whether they are "on grade level." This criterion may be less used than the above two because of where students in the sampled districts currently score. Recall that over 40% of respondents serve in districts which score below the state average on CAP. They perhaps achieve a sense of progress and success--and/or can convey such a vision publicly--by looking for improvement and relative accomplishment.

It is of interest to note that few respondents, less than 20%, evaluate the quality of their schools in relation to specific expectations or goals, e.g., students scoring at specific levels; students mastering specific goals. Criterion-referenced interpretations or performance related goals are generally not in board members' vernacular.

Based on personal observations of schools and classrooms. In making judgments about the quality of their schools, board members were about equally divided among those who did and did not claim to be assessing relatively specific aspects of the school setting. Consistent with the interpersonal orientation mentioned earlier, the most commonly observed aspect was school climate, as evidenced by the quality of interactions among and between students and teachers. Also commonly mentioned were teacher morale, teaching methods used in classrooms, and perceived student involvement in classwork (e.g., interest, attention). About one-fifth of the responded also paid some attention in their observations to classroom management and control issues. The

flavor and variety of criteria used are evident in these comments:

> I expect to see cooperation between teachers. I expect to see classrooms where students are attentive and are learning. I don't expect to hear a lot of non-school related noise--the playgrounds are well supervised, the lunch shelters are well organized and the kids are under control.

Relatively infrequent were those who claimed to pay attention to physical characteristics--the appearance of teachers, classrooms, or school grounds; the presences of specific instructional resources. Also rare were those who paid attention to the nature or quality of student work products or instructional content. (See Table 4 and Graph 2)

How Do School Board Members Make Sense of the Evaluation Reports They Receive?

While a majority of school board members report scrutinizing the reports they receive, an even larger number report seeking help from others to help them understand and interpret the findings. One board member was very frank on this issue: "In a nutshell, I rely a lot on management to help me understand. After all as a trustee I don't know your job or other testers' job out there so I rely on that kind of information and support."

About a half are looking for aberrations as they peruse findings, e.g., data that doesn't conform to general patterns, findings that somehow jump out from the page. Or as one put it, "I look for something that is really out of whack."

About a third are looking to answer specific, although largely idiosyncratic, questions, e.g., how does school x in my region compare to school y? how many students scored above grade level? Has the proportion gone up? how did students perform in higher level skills. (See Table 5)

In contrast to principals' use of results, less than a third are specifically looking for areas of strength or weaknesses and only a couple mentioned that results were directly linked to calls for programmatic changes. Board members also were relatively less interested in subgroup performance. While almost two-thirds were interested in breakdowns of results by ethnicity, only about one third volunteered interest in specific results of limited English proficient students, and only about ten percent expressed interest in gender differences or differences by program category. (See Table 6)

What Are School Board Members Preferences for Reporting?

Content of Reports. The great majority of school board members had little to add when asked what additional information would be helpful to them. However, a significant minority, 20 to 25%, expressed interest in additional information, including quantitative indicators such as attendance rates and drop-out rates; and better information about school climate. (See Table 7)

A slightly larger proportion also were interested in additional analyses that might contribute to their decisionmaking. Over a third wanted analyses that would help them compare the effects of different instructional programs, and about a quarter each wanted analyses that would let them see relationships between performance and student demographics and answer specific policy or practical questions.

Format of Reports. Results regarding format indicate the difficulty of pleasing everyone. While half the respondents preferred graphical displays, about a third each listed tables or narrative as favored modes of communication. (See Table 8 and Graph 3)

Whatever the format, however, brevity appears to be the valued characteristic. Among reactions were,

> Well, the first thing that pops into my head is that they are usually boring. I read the executive summary and that makes sense to me, and I suppose that it's just the nature of the beast that a lot of numbers are boring.

> A small, concise report--four or five pages at the most.

Forty percent volunteered their desire for brief executive summaries of findings. However, because only ten percent wanted less technical information, it appears that while board members desire the findings digested for them, many also want to credibility of the full technical data.

Implications and Conclusions

The results of the interviews carry both good news and bad news for those concerned with the use of information and its effects on educational policy and program improvement.

Good news. First, the findings help to allay some of the concerns of those who have reservations about the value

of standardized testing and who worry about over-reliance and misuse of test results. The results clearly indicate that for most school board members such worries are misplaced. Most school board members claim to be aware of the imperfections of tests and judge the quality of their schools based on a broad array of information sources. One board member put it this way: "I know our youngsters get a lot more out of school than, than just test scores...so we can't go whole-hog on just test scores. I know that. There's other good stuff out there."

In short, board members' judgments appear to reflect a balance of both qualitative and quantitative data, much of which is experientially based. Consistent with research in knowledge utilization (Lindblom and Cohen, 1979), school board members seem to rely on informal working knowledge over formal information. While most do not appear to over-rely on test data, some do seem to accept unquestioningly any test results.

A second potential source of good news concerns the working relationships between the board members in the study and the education professionals in their respective districts. Board members generally rely on district administrators--the superintendent, the research and evaluation director, school principals--for their information about the quality of schools and trust these individuals to interpret available data. A vocal minority, however, expresses great skepticism and distrust of their administrators' opinions interpretations. Exemplifying this view was the comment, "I think that numbers can be put together in such a way that people are going to prove a prejudice or an idea that they had." Members of this second group do not believe anything unless they see and process it for themselves.

A third piece of good news which emerges from the findings is that relatively simple changes in reporting strategies could increase the utility of information for board members. For those districts or states who do not already do so, the addition of an executive summary would make evaluation findings easier for board members to digest. "Keep it short" and "keep it simple" are too important dictums. Further, organizing such summaries (and the full reports) around the big questions which board members seek to answer would also be beneficial. The questions include: How are we progressing over time? How do our results compare with similar districts? How do our results compare with the national norm group? What are the implications of reported results for policy (areas of relative strength and weakness, differential performance by group or program).

Differences in Board members report format preferences preclude easy prescriptions. Backing executive summaries

with technical data provided in all formats (graphics, tabular, and full narrative) is one possibility for pleasing everyone, although a weighty one. Combining an executive summary with simple, visually clear graphical displays would probably please a majority, assuming that full technical data were provided as an appendix. The tension among differing preferences, however, may be a relatively short term problem as desktop technology becomes even more accessible for all. For the future, technology-based reports could enable everyone to customize reporting to their own preferences for both organization and format without having to wade through endless pages to find an appropriate match.

Bad news. A first note of bad news relates to informed consumerism. While most board members claim not to overemphasize test results, their knowledge and expectations for testing appear less than adequate. Only half of the respondents seemed to be aware that different kinds of tests were given in their district--at a minimum in these districts, the state assessment program and a norm-referenced commercial test. Most appeared to talk in the vernacular of norm-referenced tests, interested in whether students scored at or above grade level or at or above the national average, but almost none seemed to recognize that their goals were unrealistic given the nature of such tests. "If we're at the 50th percentile, being average isn't acceptable to me." Measurement experts know that all students cannot score above the national average, that all students cannot show progress relative to a national average, that scoring "at grade level" does not have a clear task or skill referent; board members do not. If Board members are to seriously use test information, they need to be helped to become more critical consumers.

Some believe that education is best guided by a vision of what students should be able to do and accomplish; board members generally do not articulate such a vision or recognize the weaknesses of available norm-referenced test information for evaluating progress toward such a vision. Further, board members' qualitative bases of information are largely idiosyncratic, built on personal views of what constitutes a good educational program, a good school, a good climate, and drawn from relatively happenstance interactions and observations. While such perceptions certainly have face validity, the reliability of their samples are moot. Chance encounters at K-Mart check-out counters may or may not accurately represent the full reality. Further, the construct validity of board members judgments, particularly those derived from school and classroom observations, could be strengthen. Judgments could benefit from firmer grounding in research-based conceptions of educational quality and in research-based principles of effective schooling and quality instruction. While clearly it is unrealistic to expect Board members to be current on the research, it is possible

to envision training opportunities where Board members might refine what they look at/for as they observe and evaluate classrooms and schools.

Attention to student performance is a prime candidate for emphasis should such opportunities occur. What are students working on? What is the nature of the tasks they are able to accomplish, the products they result in? Are these tasks and products meaningful, motivating, likely to require higher level thinking, likely to result in long-term learning? Board members as a group give little attention to such issues. Articulating the important elements of a productive school climate, given the attention board members pay to the climate issue, appears another priority.

Is it reasonable to expect school board members to be more informed data users? Is it possible to help them become such users? The answer to both these questions is "probably yes" But in the end, the worst news which emerges from the experience of interviewing is an answer to the question "Will such use make a difference for educational quality?" In talking with Board members it seems clear that for most, the impact is likely to be marginal. Test scores and other data make a big initial splash when they appear in the newspaper or are bought to the Board. The splash may initiate consideration of the quality of education and how to improve it, but the splash is generally short-lived as a board moves on to the myriad of other matters which come before it. In fact, discussions of or agenda items related to educational quality are few and far between; board agendas appear swamped by the reality of approving consultant contracts for school workshops, for renovations, for new facilities and the like; and by the reality of maintaining status and position. In many of the schools and districts we visited, the problems of surviving, of maintaining the bureaucracy, of maintaining one's power, appeared to have displaced the primary goals of education.

The use of data to improve schools assumes a largely rational, educational goals-based system. The technical problems of providing reasonable, useable data are tractable, and the results of our interviews provide some feasible directions for their solutions. Assuring their impact on educational quality, however, will require continuing attention to larger socio-political issues.

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Table 1: Background and Demographics
School Board Members
n = 27

Experience	%	District Size	%	District SES	%
Beginning	18.5	Small	11.1	Low	25.9
Intermediate	22.2	Medium	74.1	Mid-Level	66.7
Veteran	33.3	Large	14.8	High	7.4

Table 2: Sources of Information Used by School Board Members
n = 27

Sources	%
Informal Parent Input	79.9
Sch/Class Observation	70.3
Superint/Other Adm Input	69.2
Informal Stu Input	55.5
Community Input	55.5
CAP	51.8
Informal Teach Input	48.1
Norm Reference Tests	44.4
Newspapers	42.3
Principal Input	38.5
Grades	33.3
Dropout Rate	33.3
Awards	25.9
Discipline	22.2
College Prep Exams	22.2
Proficiency Tests	18.5
Teacher Turnover	11.5
Success - Next Level	11.1
Mobility Rate	11.1
Entries - Higher Level	11.1
Attendance Rate	11.1
Counselor Input	7.7
Formal Parent Input	7.4

GRAPH 1

Sources of Information

School Board Members

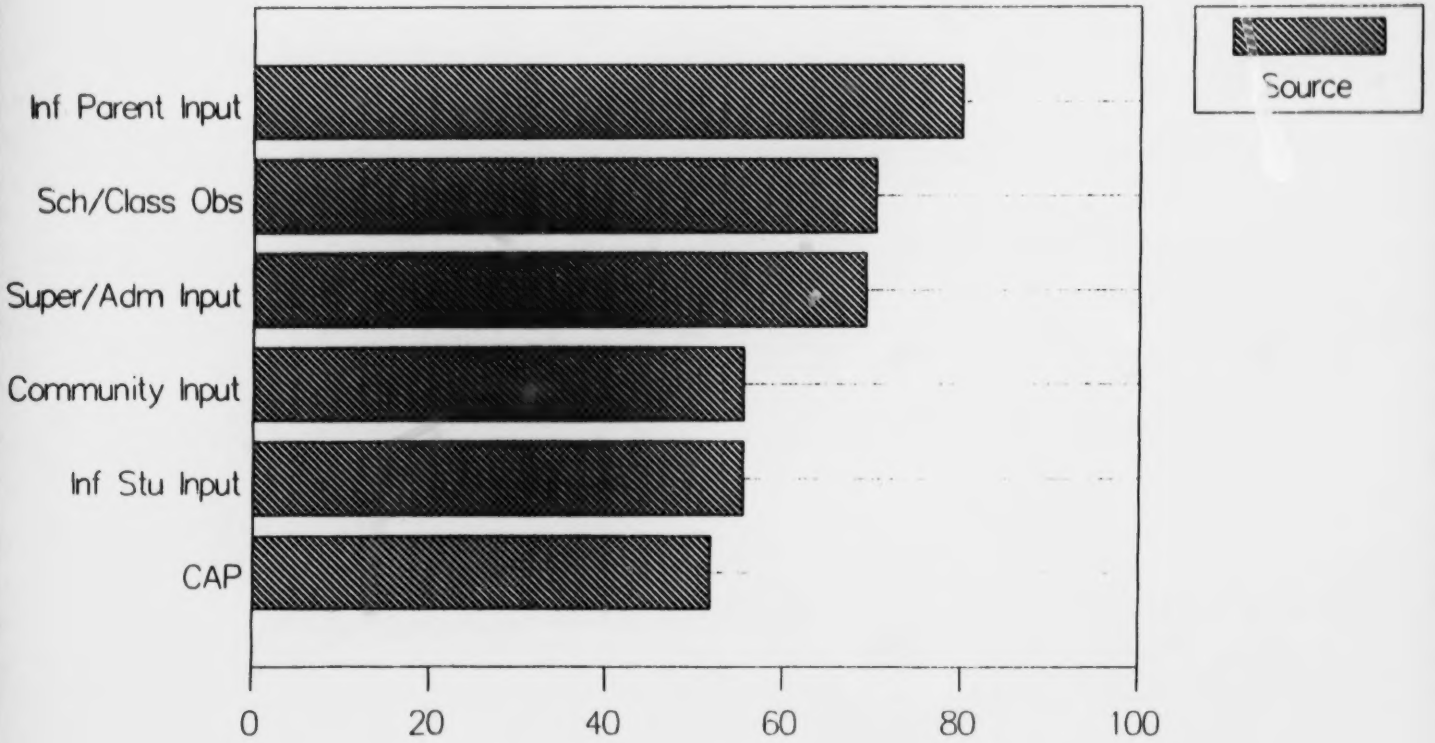


Table 3: How School Board Members Evaluate Test Scores
n = 27

	%
Trends Over Time	88.5
Compare Similar School	73.1
Grade Equivalency	50.8
Compare Personal Goals	18.5
Indiv Student Scores	3.7

Table 4: Criteria for Classroom Observations
School Board Members

Criteria	%
School Climate	48.1
Student Involvement	37.0
Teacher Morale	29.6
Teaching Method	29.6
Class Appearance	22.2
Class Management	18.5
Work Product	14.8
School Appearance	14.8
Class Resources	11.1
Instructional Content	11.1
Teacher Appearance	7.4
Lesson Plans	3.7

GRAPH 2

Criteria for Classroom Observations

School Board Members

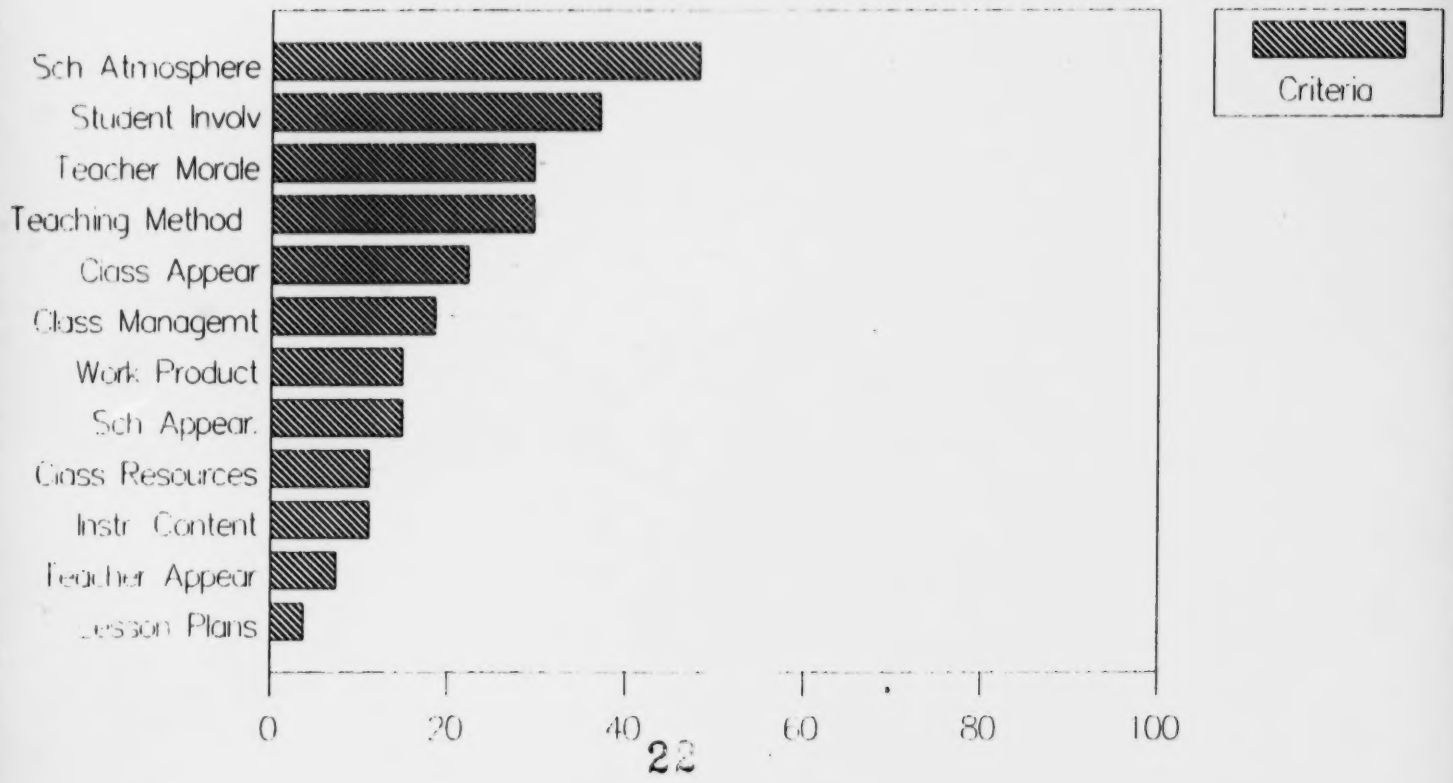


Table 5: How School Board Members Make Sense of Test Scores
n = 27

Activity	%
Seek Help	70.4
Scrutinize Report	55.6
Look for Abberrations	48.1
Answer Questions	33.3
Skim Report	33.3
Look for Strengths/Weaknesses	29.6
Communicate Results to Others	22.2
Summarizes Report	18.5
Seeks Instructional Reform	7.4

Table 6: Interest in Sub-Group Differences

School Board Members
n = 27

Interest	%
Ethnicity	59.3
Limited English	36.0
Social Economic Status	29.6
Stereotype Misuse	14.8
Gender	11.1
Achievement	7.4
Other Programs	7.4
General Interest	7.4

Table 7: Additional Information Wanted by Sch Board Members
n = 27

Information	%
Analysis of Test/Programs	33.3
Info on Individual Schools	22.2
Analysis of Test/Demographics	22.2
Analysis for Policy Questions	22.2
Descriptive Info on Test	18.5
Other Quantitative Indicators	18.5
School Climate Information	14.8
Prescriptive Information	7.4

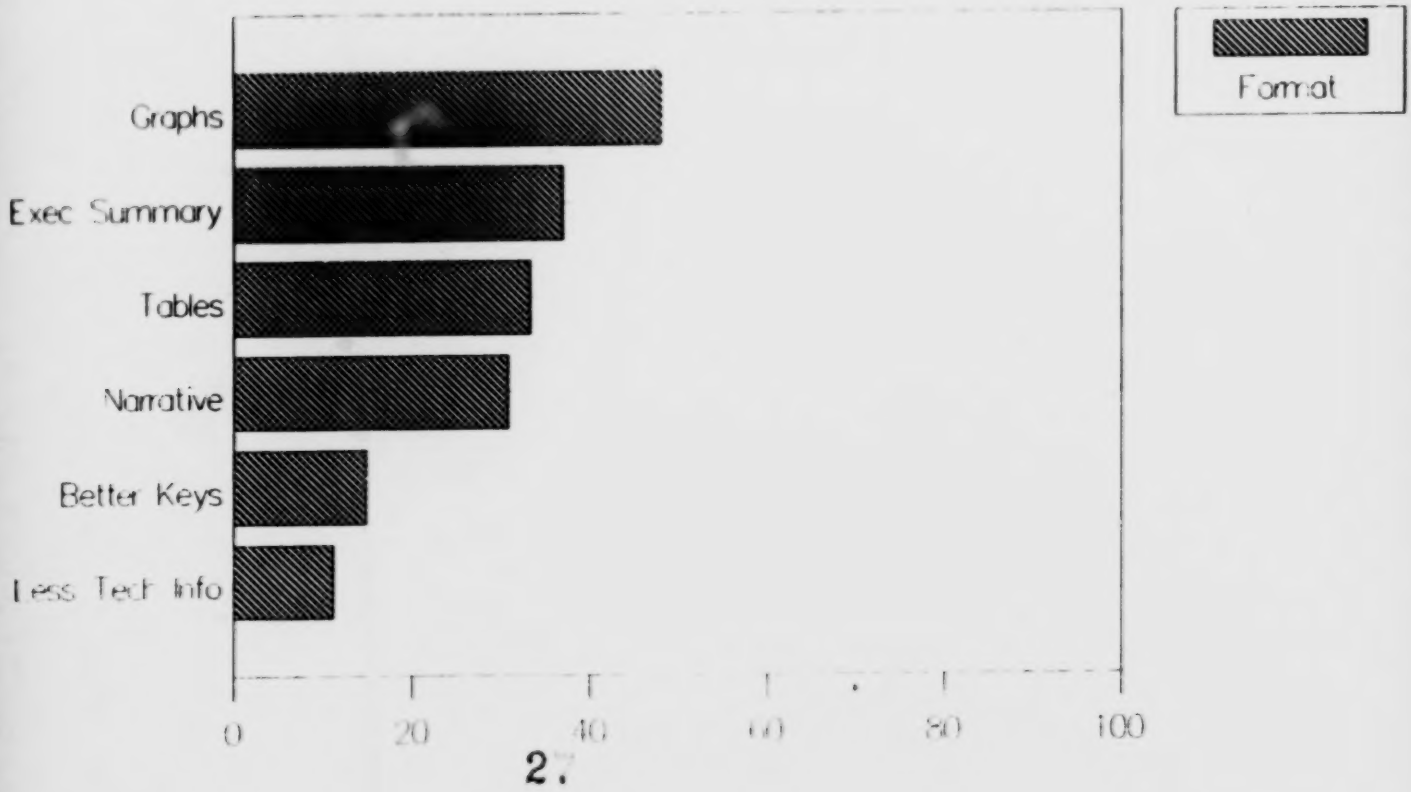
Table 8: Preferred Format
School Board Members
n = 27

Format	%
Graphs	48.1
Executive Summary	37.0
Tables	33.3
Narrative	30.8
Better Keys	14.8
Less Technical Info	11.1

GRAPH 3

Preferred Report Format

School Board Members



Principals: Their Use of Formal and Informal Data

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Paper presented at the Annual Meeting of the California Educational Research Association, Milbrae, California, November, 1989.

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Principals: Their Use of Formal and Informal Data

In today's information age school principals are bombarded with enormous amounts of information about those whom they serve. Test scores, attendance rates, discipline records, teacher, parent, and student input, and observations are just a few of the sources of information about students that principals receive. Given so many alternatives which ones do principals really use and for what purpose? Does one's preferences for different sources change according to how many years experience one has as a principal, whether one is an elementary, middle, or high school principal, or whether one's students are from low, middle, or high socio-economic standings? How can those of us interested in promoting the systematic use of data in schools help principals to use data more effectively? In this paper, we will begin to answer these questions and provide suggestions for improving the reporting of school data.

The Multi-Level Evaluation System (MLES) project, funded by the Office of Educational Research and Improvement (OERI) and administered by the UCLA Center for Research on Evaluation, Standard, and Student Testing (CRESST), has studied the use of school information for almost three years. The MLES project is investigating the feasibility of developing comprehensive information systems that will serve the planning and policy needs of school-based educators, district administrators, and school boards and intends to develop a set of design specifications for such systems. The first stage of the project was to compile a multi-disciplinary literature review that summarized the guiding principles for the design of school-based management information systems and the presentation of school data reports. Stage two featured a review of existing district reporting practices. This paper discusses some of the results of stage three, an interview study of 73 principals, school board members, and other district administrators about how they process and use information on school quality.

We conducted a study that asked principals to define how they use school data and other information. We interviewed the principals using open-ended questions and carried out a content analysis of their responses. The procedures used in the interview and content analysis stages are described in the methodology section of this paper. Principals generated a long list of information sources and some patterns of usage emerged. Some ways in which they misused information also appeared. The findings of the content analysis are discussed in the results section of this paper. The results of this study hold valuable lessons for those who create school data reports. The implication and conclusion section of this paper offers applications which can increase the utility and clarity of school data reports.

Methodology

The MLES project's multidisciplinary literature review and examination of district reporting practices were the basis for hypotheses about how principals use data in the real world and the variables which are likely to influence such use. These were the basis for the sample design and the interview protocol.

The Interview Protocol

The interview protocol was developed to examine questions and variables of interest and then revised based on field test results. The final version had three parts:

Pre-interview. The pre-interview consisted of an introduction, a statement of purpose, a description of the general content of the interview, an assurance of anonymity, permission to tape the interview, and solicitation of clarifying questions.

Interview. The second part of the protocol contained the interview questions. The questions concerned the sources, criteria and application of information principals use to assess the quality of education in their schools. Other questions were about principals' interest in sub-groups test data, preferences for particular formats for test reports and additionally desired information. The final question asked principals how much they felt test data reflects what is important in schooling. Copies of the exact questions used are located in Appendix A.

Post-interview. The final section of the protocol consisted of questions for the interviewer (which were completed as soon as possible after the interview). This sheet had five comment areas - key themes, areas of concern, areas of confusion, personal reflections and suggestions for future interviews (see Appendix B).

The Subject Population

Twelve districts were selected for participation in the study to represent a range of socio-economic status levels, diversity with regard to ethnic composition, and a range of sizes. Within each district, three principals and three board members were to be randomly selected for interviews.

This paper focuses on the subsample of 38 school principals from all 12 districts which were part of the study. Of the 12 school districts, two districts had less than 10 schools; eight had ten to 30 schools (classified as medium), and two had more than 30 schools (classified as

large). The schools served in this obtained sample varied in ethnic composition and socio-economic level. The ethnic composition of most schools was either mixed-minority majority, mixed white majority or majority Latino schools. Other minorities represented were Afro-American and Asian.

Three school levels were represented - eighteen elementary school principals, eight middle school and eleven high school principals. Job experience data on twenty-six of the principals indicated that six were beginners with one to two years experience, eight had three to six years experience, and twelve were veterans with seven or more years.

Interview Procedures

Staff from the U.C.L.A. Center for Research on Evaluation, Standards, and Student Testing (CRESST) and directors of district research and evaluation offices were recruited and trained in study procedures. Training included discussion and practice in the use of the interview protocol as well as directions for randomly selecting respondents, and for taping, summarizing and returning completed interviews. Interviewers then used the protocol to obtain data.

Each interviewee was first contacted by phone and asked to be involved in the study. Most interviews took approximately a half hour. All the interviews were tape recorded. The interviews were all conducted between May and September, 1989.

Interviewers summarized the results of their interviews as soon as possible after each interview. Both the interview summaries and tapes were turned over to the MLES staff. The MLES staff then coded and analyzed the results.

Analysis of the Data

Tape interviews were summarized and a code book was assembled and tested by four coders. Formal coding did not begin until there was one-hundred percent agreement on eight test interviews. For the study reported in this paper frequencies were tabulated and analyzed for both overall principal data and on the basis of four specific contextual variables - the school's ethnicity and the school's SES, the principal's years of experience, and the school's performance on CAP reading scores.

Limitations of the Data

Like much of research conducted in natural settings, this study had difficulties in controlling the presence of contextual variables of potential interest. In addition,

sample sizes limit the generalizability of findings, particularly for those analyses which attempt to assess the effects of contextual variables, e.g. principal's years of experience, school SES, and school CAP achievement. We also were not able to separate out the effects of school level, principal's experience, school SES, and school CAP achievement from each other. Due to these caveats, the findings presented in our results section should be viewed as preliminary patterns and areas for future research.

Results

What Information Do Principals Use?

Sources of information used. School principals who participated in our study use a total of twenty-four sources of information to judge the quality of education in their schools. The sources are both quantitative and qualitative. The median number of sources used by principals is eight.

Our study found that the most frequently used source is school and classroom observation (nearly 87 percent utilize observations). Many principals found classroom observations to be their most valuable source because observations provide immediate feedback as well as give the principals a wholistic and personal sense of how the school is functioning. For example, one elementary school principal told us that classroom observations are his most valuable source because they provide "first hand information" that he can gather every day. Another principal said, a classroom observation "...tells me more than anything else, so I visit at least five classrooms daily."

Other widely used sources included CAP scores, mentioned by seventy-four percent of the principals, and other norm-referenced tests mentioned by seventy-one percent. Although many principals use test scores when evaluating their schools, they feel these test scores receive more attention than they deserve because of the emphasis placed on them by state and district officials. Principals expressed their frustration about this over-emphasis of test scores. According to one principal, "Test scores are rated as important because of the State and District's emphasis on them." Another complained that, "With the over-emphasis of testing by bureaucrats, testing becomes an end, rather than a means to an end." Further, test scores seem to have their biggest impact as a source when they first are reported. A junior high school principal who mentioned test data as his first source of school information also said:

> Down the line, test data is not really at the top (important). It's only at the top when it's in the paper. When it's in the minds of people; other than that, it's not a high priority. People forget about it.

CAP scores were also the most controversial source with sixteen percent of the principals saying that they have no value as a source of information. The principals complained about CAP's instructions, self-report measures, and reporting of results in comparison bands (these bands are supposed to compare schools similar in socio-economic standing.) A high school principal who preferred CTBS to CAP told us, "The CAP test contains too many self-report items with bad and ambiguous instructions. Also, the CAP comparison bands are unfair because they do not take into account bussing."

Informal teacher, parent and student input were mentioned as important sources by almost half of the principals and ranked fourth, fifth and sixth respectively among these mentioned. Student grades ranked a close seventh. Other quantitative sources such as teacher turnover rates, drop-out rates and mobility rates were among the least used. Thus while quantitative measures are viewed as important-ranking second and third in our study-qualitative indicators appear to receive more overall attention than quantitative indicators. (Detailed results of our analysis are summarized in Table 1 and Graph 1.)

Effect of school level. The data yielded interesting contrasts depending upon grade level. There is a marked difference in what elementary and high school principals consider important sources of information. High school and middle school principals rely more heavily on informal teacher, student and parent input than do elementary school principals. Another difference is that elementary and middle school principals are more interested in CAP and other achievement tests while high school principals are more interested in college preparation exams such as the SAT. In addition, the use of classroom observation declines as the level of the school increases (see Table 2).

Effect of years of experience. Analyses by experience level based on a sub-sample indicate that those with six or more years of experience appear to use fewer sources of school information. Veterans of six or more years used a median of six sources while beginning principals with two or less years of experience used a median of nine sources. In addition, veterans appear to rely less on CAP and norm-referenced test data than do beginning principals. Furthermore, veteran principals are less likely to seek or use the advice of superintendents or other district administrators (such as research and evaluation directors). Additional research would be necessary to validate these findings given the small sample size. (Refer to Table 3). A difference in the emphasis placed on test data and district advice can be seen in these descriptions of the use of test data offered by a beginning and veteran elementary school principals:

(Beginner) I rely on workshops given by the different project heads, such as the CTBS or Director of Federal Projects, to get an understanding of the district data and suggestions on how to present the data to my staff.

(Veteran) I tend to be skeptical about test data...its just one piece of information about a child.

Effect of SES and CAP achievement. The two contextual variables of socio-economic standing of the student population and the school's performance on the reading section of the CAP exam were both related similarly to the use of sources. This was probably a function of a high correlation between SES and success on the CAP exam. Four differences in the use of data emerged between principals from schools of different economic standings and levels of achievement on the CAP exam. Principals of schools with higher SES levels and which perform above the state average on CAP exams tend to be more interested in student success at the next grade or school level, attend more to informal parent and student input, and seek less guidance from district administrators such as research and evaluation directors than do principals of schools of lower SES students and those whose students perform below the state average on CAP. The lack of interest in administrator input among the high SES and achieving school principals may be due to the common tendency to not search out more information when feedback is good and supports prior expectations. (See Table 4 and Table 5.)

The differences in school evaluation approaches between low and high socio-economic elementary school principals are illustrated in the quotes below. The principal of a low-income based school that has been at the lowest percentile per grade level based on national norms for years reported:

> To tell if my school is doing a good job, I look first at test scores since they are widely publicized. I want to see whether my students are on grade level and whether there has been growth over the year. I feel testing is the most important objective source for determining student progress...My school has remained at about the same level test-wise for about five years. I consider this a plus in light of turnover in staff and the influx of new students.

The principal of a high-income based school that consistently scores above the 90th percentile on standardized tests reported to us that to tell if her school is doing a good job:

> ...I observe classrooms. I want to know that the kids are learning and how they feel. I go into classrooms

and look for interaction, active learning, and interest on the part of the students. I also receive parent feedback on the annual survey and from parents involved on the school site advisory committee. I also use test scores and find out how well students are doing in intermediate school.

What Criteria Do Principals Use When Making Their Assessments?

Observing schools or classrooms. The most popular source of information named by principals was personal observations on both the school and classroom levels. Most principals, about two-thirds of the respondents, had specific areas of interest in mind when they made their observations. School or classroom climate was the most popular area of interest and was defined in terms of student-student and student-teacher interactions. When asked what he would find in a classroom with a positive climate, one principal named, "the teacher interacting positively with the children; a child who does something wrong is not put down--rather he is encouraged; and positive exchanges among the kids."

Besides interactions among students and teachers, positive classroom climate was also defined in terms of the students' attitudes toward learning and the teachers' attitudes toward teaching. Students were seen as experiencing a positive classroom atmosphere "if students are happy, meaningfully involved, and like and understand what they are doing." Teachers were seen as creating a positive classroom atmosphere when they displayed "an attitude that education is important, that they love kids, that they want to impart this information."

Other frequently mentioned areas of interest when observing a classroom were instructional content, teaching methods, student involvement in instruction, student work products, and teacher morale. (See Graph 2 for actual percentages of factors examined.)

Analyzing test data. Standardized tests such as CAP, CTBS, and others were the second and third most used sources of school information. One third of the principals interviewed reported needing help to interpret test results. Many more principals expressed that the time necessary to analyze test data thoroughly is limited and inconvenient. A junior high school principal explained:

> We're (principals) flooded with data. We are right now so caught up in the day-to-day management of our schools, we don't get to the point of analyzing data...The direction we're going means that this kind of data (test data) is going to mean less and less to us

unless somebody comes along and pulls it out for us, condenses it, and summarizes it.

For those principals who read and interpreted their own test results, their primary strategy was to look for trends of performance over several years (74 percent said they employed this strategy). Half of the principals said they compared their school's performance to other similar schools. As one principal told us, "I look at average scores to see how my school compares with other schools, particularly schools that serve similar types of students. I also think that comparing student progress over the years--cohort tracking--is important."

Also common when interpreting test results was comparing their school's performance to the national average or some other grade equivalency score. The desire to not fall below grade level on the national norm was strongly expressed. One principal told us, "We always strive and work toward being on grade level--always!" Besides the goal of being at or above grade level, 42 percent of the principals said they approached the data reports with predetermined goals for their schools, such as to be above the 75th percentile. (See Graph 3.)

How Do Principals Apply Test Data?

Using data. In addition to how principals make sense of test data, we were interested in how principals use and apply it. We found that the most common use of test data is to communicate it to teachers and parents (three-quarters of the principals reported doing so). Also popular was using test data to identify areas of instructional strength and weakness. Slightly less frequent was follow-up to actual use of this data for instructional reforms. One principal told us that when she receives test results from the District:

> I return to my school and meet with the faculty all together and by grade level. In the grade level meetings we compare for each subject area teachers' scores with others, their strengths are recognized and areas in need of greater emphasis are identified. Ways to ameliorate a particular problem are discussed in detail.

Over a third of the principals use the test data to answer specific programmatic questions. For instance, a principal may specifically check the movement of the third grade's CAP reading score because he or she is concerned about the introduction of a new basal reader in the second grade. Finally, almost a quarter of the principals mentioned they look for aberrations, unusual results, that may highlight potential problem areas. (See Graph 4.)

Discrepancy handling. In order to determine to what extent principals rely upon test data and whether they use it uncritically, principals were asked how they respond when faced with discrepancies between test data and other sources of data such as observations or input from teachers. Their answers suggest that principals are fairly sophisticated in their use of test data. Over one quarter of the principals said that they would consider multiple sources before determining the meaning of the discrepancy. When making sense of inconsistent information, one principal told us how he involves his staff in considering these multiple sources of information. He said:

> The only solution to that (a discrepancy) is to analyze what the test is measuring and what is the population. We do this through a teacher committee and decide what information to pay attention to.

We believe that this first approach to handling discrepancies, considering multiple sources, is the most appropriate and should therefore be further encouraged through in-service and pre-service trainings of school administrators.

Another quarter of the principals said in the face of a discrepancy, they would question the test. Other strategies mentioned by the principals were to question the match between the test's coverage and the classroom instructional coverage or to look to alternative explanations such as unusual weather or high rates of student mobility. This is what a principal who questioned the test as well as considered alternative explanations had to say:

> If there is a discrepancy between test scores and classroom observations, I would look at changes in our student population, especially in the number of LEP students. I would trust my observations over the test scores.

Only one quarter of the principals said they would believe the test in the face of their own or others' observations. (See Graph 5.) For these principals, the test results always had value, and in this case reflected some defect in the instructional program. One such principal told us:

> We (the staff) have to go back and look and say, What's going on here? Why do we have this? I don't think you can ignore this (the test results). No matter what you think of the test; no matter how invalid you may think the test is; how prejudiced it is, you are still competing against yourself on whether you go up or down.

It is interesting to note that the principals' reliance on and interpretation of test findings does not appear to vary with the school's economic standing, the years of experience at their job, the grade levels present at their school, or how well their school does on standardized tests. Therefore their handling of data discrepancies involving tests does not appear to be a defensive reaction.

Are Principals Interested in Sub-Group Differences?

Interest in sub-group differences. Asked if they had any interest in sub-group differences, almost half the principals expressed an interest in performance differences among ethnic groups (primarily Latino, Afro-American, and White). Another sub-group of interest was those students who are limited in English proficiency. Other bases for sub-groups of interest were socio-economic standing, gender, and levels of achievement. One tenth of the principals expressed the concern that sub-group information may lead to misuse and inappropriate stereotyping. One principal who expressed concern about reporting sub-group differences told us, "I don't believe we should pigeon-hole kids or pit this group against the other. Instead, we must look at lots of variables like home input and quality of teachers in that school."

What More Do Principals Want from School Reports?

Additionally desired information. Most of the principals seemed reluctant to ask for any more information than they already have or receive. Of those who were interested in additional information, the greatest interest was in analyses showing relationships between test results and specific instructional programs. These principals want to be able to tie test data back to their choice of textbooks, teaching methods, or other instructional reforms. Other desired information included: more data about individual students that could help with instructional diagnosis; more descriptive information about what the test is measuring; prescriptive information that tells the principal what instructional practices can be taken to rectify low scores in a particular area; information about other quantitative indicators such as dropout rates, mobility rates, and attendance rates; and analyses between test scores and student demographics (somewhat the same as sub-group differences). Very few principals were interested in additional information about school climate although this was a great area of concern when discussing classroom observations. (See Graph 7)

Preferred report formats. Principals reported their favorite format of presentation to be the graph, a finding which closely relates to their overwhelming interest in trends. This makes sense, because graphs are the clearest

way to display trends. Far fewer principals like narratives and tables. Other format preferences expressed were to include less technical information, to provide an executive summary with reports, and to improve the quality of keys for tables and graphs. (See Graph 8.)

Implications and Conclusions

This study set out to answer two basic questions: how do principals use school data and how can we help them to use that data more easily and accurately. This section of the paper addresses the latter question. It offers some recommendations for those people involved the creation of school information reports. The recommendations are broken down into two major categories: helping principals better analyze school data and helping principals better communicate with the public about the quality of their schools.

Helping Principals To Analyze School Data

Variety of sources. The first way in which one might help principals analyze school data is to make them aware of the full range of quantitative and qualitative information available to them. In our study principals identified 24 sources of information which at least one principal, and usually more, found useful. Making principals aware of the full array may lead them to incorporate new sources of information into their own judgements about school quality as well as make them aware of sources that may be used to more concretely show what they already inherently believe about their schools.

Evaluating the quality of test data. Most principals realize that test data represents only an estimation of how well their students are doing and that sometimes these estimations may be erroneous. However, a sizable minority of the principals interviewed in this study do not appear to be critical users of test data. Fully one-quarter accept without question the results of tests, even in the face of other evidence to the contrary. It would be beneficial for all principals to approach test results with skepticism and be fully familiar with their potential shortcomings (such as a poor test, poor testing environment, mismatch of test and instructional goals). Similarly, a number of principals appear to need assistance in more effectively using test results to improve their instructional programs, e.g., in identifying areas of instructional strengths and weakness and in designing and following up on program changes to address those weakness.

Relating test data to instruction. Principals want help relating test data to instructional practices. When asked what additional information they wanted, nearly one-

third of the principals wanted analyses that could relate data to instructional reforms and/or other changes in curriculum and instruction. A similar number wanted explicit recommendations about what instructional changes should take place based on the test results.

While both groups want help in better integrating testing with instruction, a distinction can be made between these two groups. Those principals who want to examine relationships between test results and instructional practices recognize that data can be used as a tool for decision-making. These principals appeared to have specific, albeit idiosyncratic, questions that they wanted the test data to help answer, e.g., has the new science textbook improved achievement? Have changes in grouping practices affected the performance of higher achieving students. This group of principals seems comfortable with using data and might benefit from automated, analytic tools to help them answer their questions.

The second group of principals, however, appear to be looking for simple answers to complex professional problems. They want prescriptions--"just tell me what to do" appears to be their sentiment. This second group of principals might benefit from learning how to approach test data with specific questions that could help them in analyzing specific areas of instruction. For both groups, however, it would be wise to reinforce the ideas that large instructional decisions should not be based on test data alone.

Formats. The choice of formats used in a school report can influence the degree to which principals can easily analyze and understand data. In this study, principals clearly state a preference for test data presented in terms of trends, and further report a strong preference for seeing those trends in graphical formats.

Keys presented with graphs apparently are a source of trouble. Keys that accompany graphs should be able to stand alone and be easily understood. In some cases a brief statement summarizing the trend's interpretation also would be helpful. Finally, executive summaries that present key trends, identify aberrations, areas of strengths and weakness, and compare school results to other similar schools would prove helpful in many cases.

Helping Principals to Communicate School Data to the Public

Reporting to the public. Principals overwhelmingly use and value school and classroom observations more than test data in assessing the quality of their schools. They balance the use of qualitative and quantitative data. Then why should they use test data as the number one, and often

only, indicator of school quality when reporting to the public? The problem is that many principals do not know how to report qualitative data to the public in a way that is credible, defensible, and clearly understood. There are also issues about the objectivity of such observations. Developing observational protocols that can be more easily summarized as well as quantified might be a solution. Such protocols could operationalize each of the areas of concern discussed in this paper, incorporating the research base on these areas, and perhaps result in a bank of observation items. A principal could then select those areas of most concern to him or herself and develop a protocol on that basis. With the help of a research and evaluation director, the results of such a protocol could be summarized and quantified for the public. The public--and parents--also could be made privy to important elements assessed by the protocol so that they could make their own observations.

Besides making observational information more credible, principals need professional yet easy ways in which to gather, summarize, and report student, parent, and teacher feedback, perhaps through routine questionnaires or random phone interviews. Current attempts at school report cards will test the feasibility and validity of such practices.

Concluding Remarks

In conclusion, this study is an attempt to understand the use of data by school principals. Although it was based on a small sample size, the study suggests patterns of information usage that can be supported, expanded, and/or changed through specific action. The implications of this study can be applied immediately to the construction of school reports and the training of school administrators. We hope that this paper also will spur future theoretical studies of school information use and prove to be of practical help out in the real world of educational evaluation.

Table 1: Sources of Information Used by Principals

Sources	% Discounted	% Used	Rank
Sch/Class Observation	3	87	1
CAP	16	74	2
Norm Reference Tests	8	71	3
Informal Teacher Input	3	58	4
Informal Parent Input	8	53	5
Informal Student Input	3	47	6
Grades	-	47	6
Formal Teacher Input	-	34	8
Counselor Input	3	21	9
Discipline	-	24	10
Formal Student Input	-	21	11
Community Input	3	21	11
Superint/Other Adm Input	-	21	11
Attendance Rate	5	19	14
Proficiency Tests	-	19	14
Newspapers	5	18	16
Success - Next Level	-	18	16
College Prep Exams	-	18	16
Entries - Higher Level	-	13	19
Formal Parent Input	-	13	19
Mobility Rate	-	11	21
Teacher Turnover	-	8	22
Dropout Rate	-	8	22
Awards	-	8	22

GRAPH 1

Frequency of Citation of Sources

School Principals

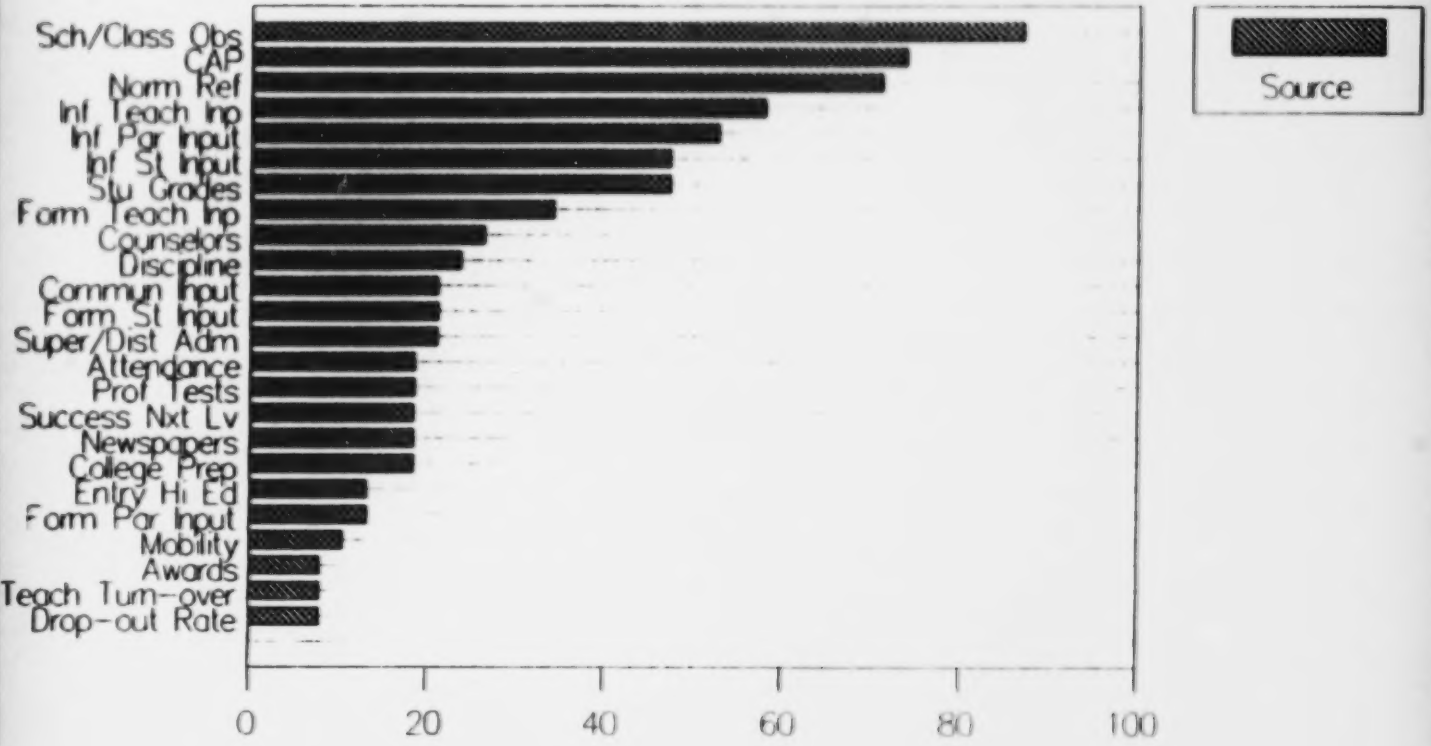


Table 2: Percentages of Principals Who Use Sources By School Level

Sources	Elementary n = 18 %	Middle n = 8 %	High n = 11 %
Sch/Class Observation	94	88	63
CAP	50	100	36
Norm Reference Tests	8	63	55
Informal Teacher Input	39	75	73
Informal Parent Input	50	50	64
Informal Student Input	28	75	55
Grades	44	50	55
Formal Teacher Input	39	25	27
Counselor Input	11	50	27
Discipline	22	50	9
Formal Student Input	17	13	36
Community Input	17	25	18
Superint/Other Adm Input	17	25	18
Attendance Rate	17	25	18
Proficiency Tests	17	13	27
Newspapers	11	13	27
Success - Next Level	11	13	36
College Prep Exams	0	0	64
Entries - Higher Level	0	0	46
Formal Parent Input	11	13	18
Mobility Rate	17	13	0
Teacher Turnover	11	0	9
Dropout Rate	6	0	18
Awards	6	13	9

Table 3: Percentages of Principals Who Use Sources By Experience at Job

Sources	Beginner n = 6 %	Intermediate n = 8 %	Veteran n = 12 %
Sch/Class Observation	83	75	58
CAP	88	75	58
Norm Reference Tests	83	88	67
Informal Teacher Input	67	50	50
Informal Parent Input	50	63	58
Informal Student Input	67	25	58
Grades	67	38	50
Formal Teacher Input	0	38	25
Counselor Input	50	25	33
Discipline	33	25	42
Formal Student Input	17	13	25
Community Input	50	13	17
Superint/Other Adm Input	50	38	17
Attendance Rate	17	25	25
Proficiency Tests	17	25	8
Newspapers	33	25	8
Success - Next Level	17	25	8
College Prep Exams	33	0	16
Entries - Higher Level	17	13	0
Formal Parent Input	0	25	8
Mobility Rate	0	13	8
Teacher Turnover	17	13	0
Dropout Rate	17	13	8
Awards	17	13	8

Table 4: Percentages of Principals Who Use Sources By School SES

Sources	Low n = 6 %	Middle n = 14 %	High n = 4 %
Sch/Class Observation	100	79	50
CAP	50	93	75
Norm Reference Tests	83	43	50
Informal Teacher Input	50	93	75
Informal Parent Input	40	64	100
Informal Student Input	50	71	100
Grades	17	50	25
Formal Teacher Input	0	0	0
Counselor Input	17	50	25
Discipline	33	36	25
Formal Student Input	33	29	25
Community Input	17	29	0
Superint/Other Adm Input	17	43	0
Attendance Rate	17	29	0
Proficiency Tests	17	14	0
Newspapers	0	21	0
Success - Next Level	0	14	50
College Prep Exams	0	14	25
Entries - Higher Level	0	14	25
Formal Parent Input	0	29	25
Mobility Rate	17	7	0
Teacher Turnover	0	0	0
Dropout Rate	0	0	25
Awards	0	7	0

Table 5: Percentages of Principals Who Use Sources By CAP Scores

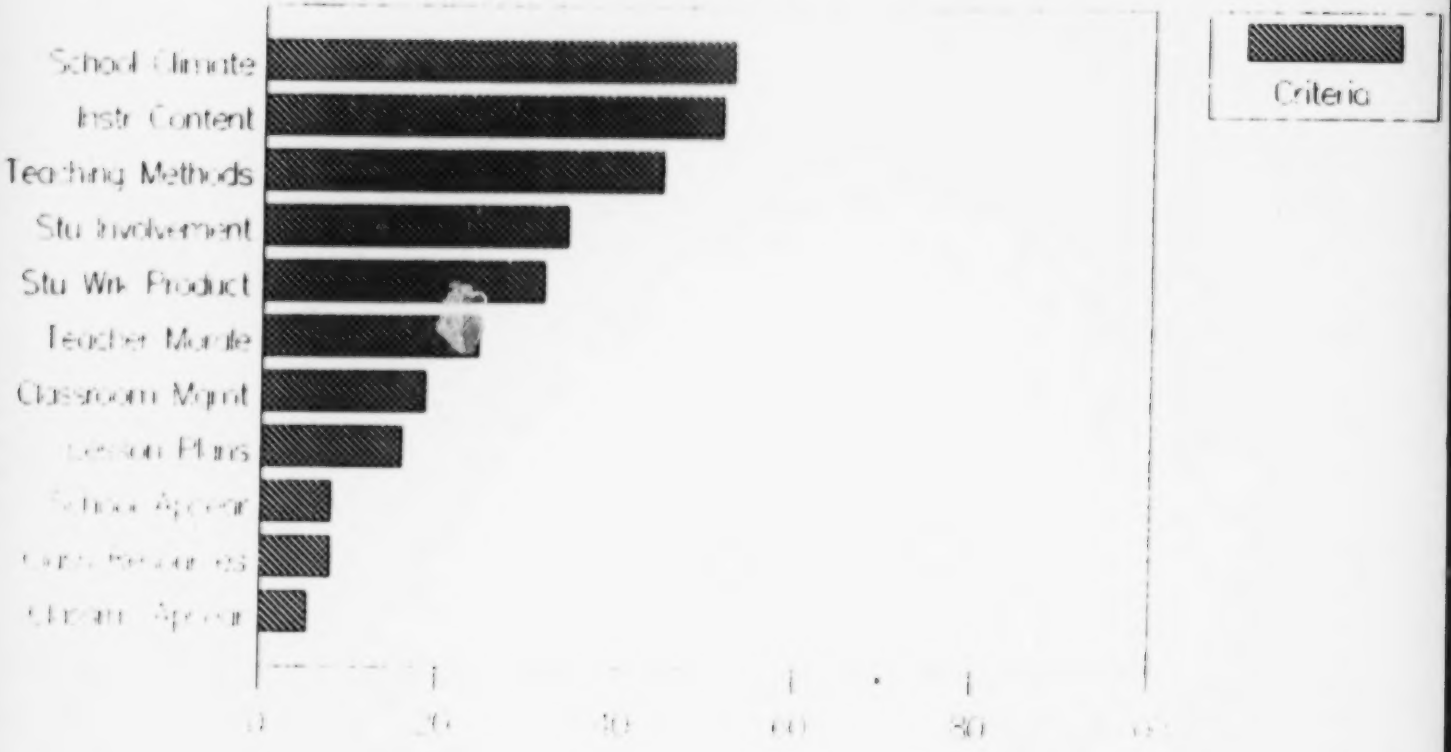
Relative to CAP Reading State Average

Sources	Below n = 9 %	At n = 4 %	Above n = 5 %
Sch/Class Observation	100	79	50
CAP	78	100	80
Norm Reference Tests	78	25	60
Informal Teacher Input	50	93	75
Informal Parent Input	40	64	100
Informal Student Input	50	71	100
Grades	17	50	25
Formal Teacher Input	0	43	0
Counselor Input	17	50	25
Discipline	33	36	25
Formal Student Input	33	29	25
Community Input	17	29	0
Superint/Other Adm Input	17	43	0
Attendance Rate	17	29	0
Proficiency Tests	33	0	0
Newspapers	0	21	0
Success - Next Level	0	14	50
College Prep Exams	17	14	0
Entries - Higher Level	0	14	25
Formal Parent Input	0	29	25
Mobility Rate	17	7	0
Teacher Turnover	0	0	0
Dropout Rate	0	0	25
Awards	0	7	0

GRAPH 2

Criteria Used for Observation

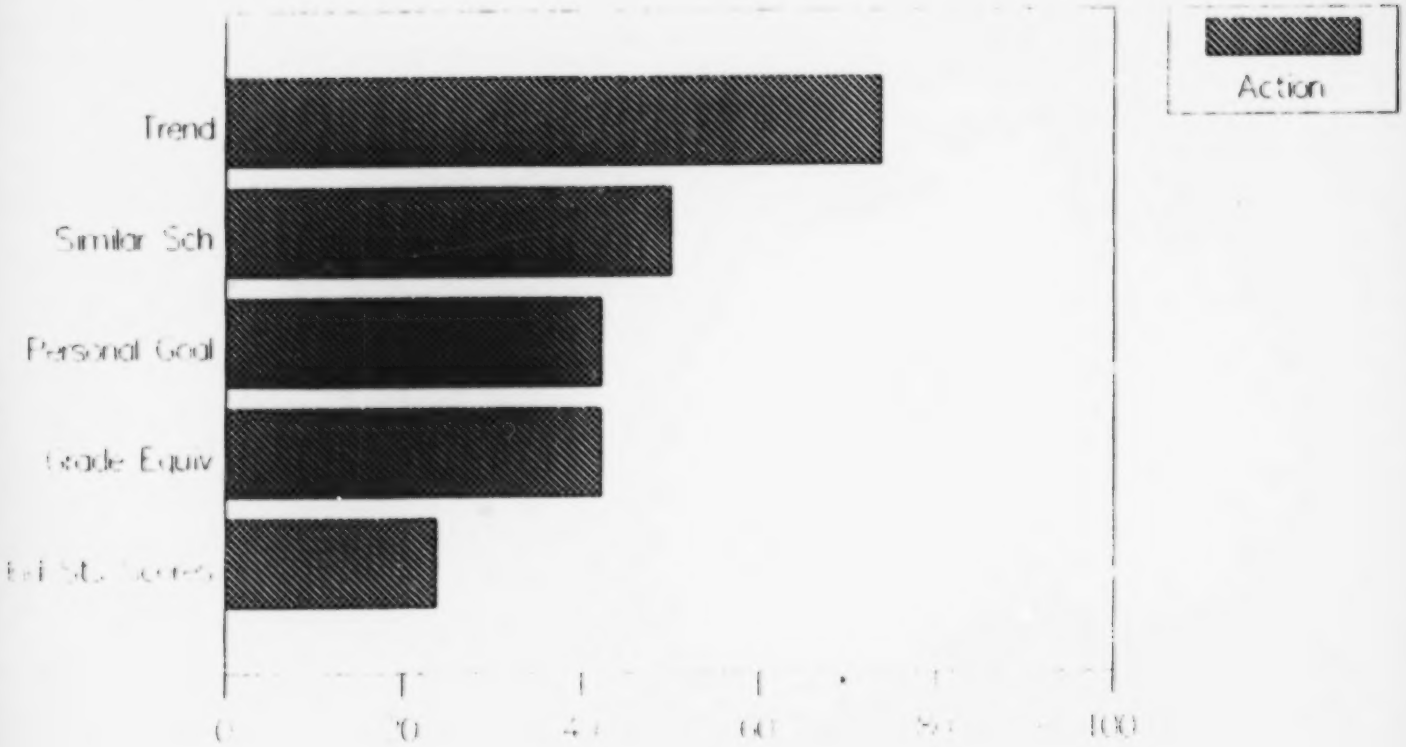
School Principals



GRAPH 3

Evaluating Test Results

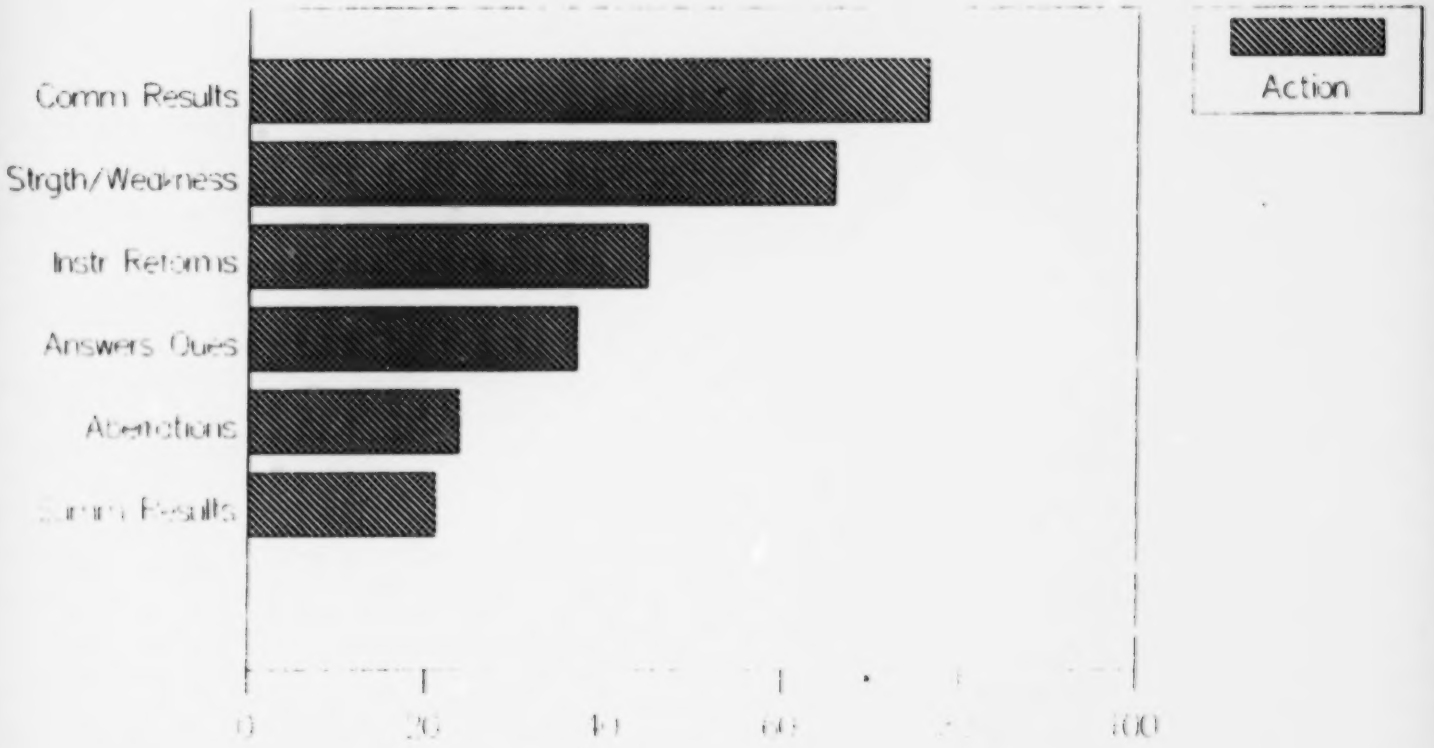
School Principals



GRAPH 4

Uses of Test Data

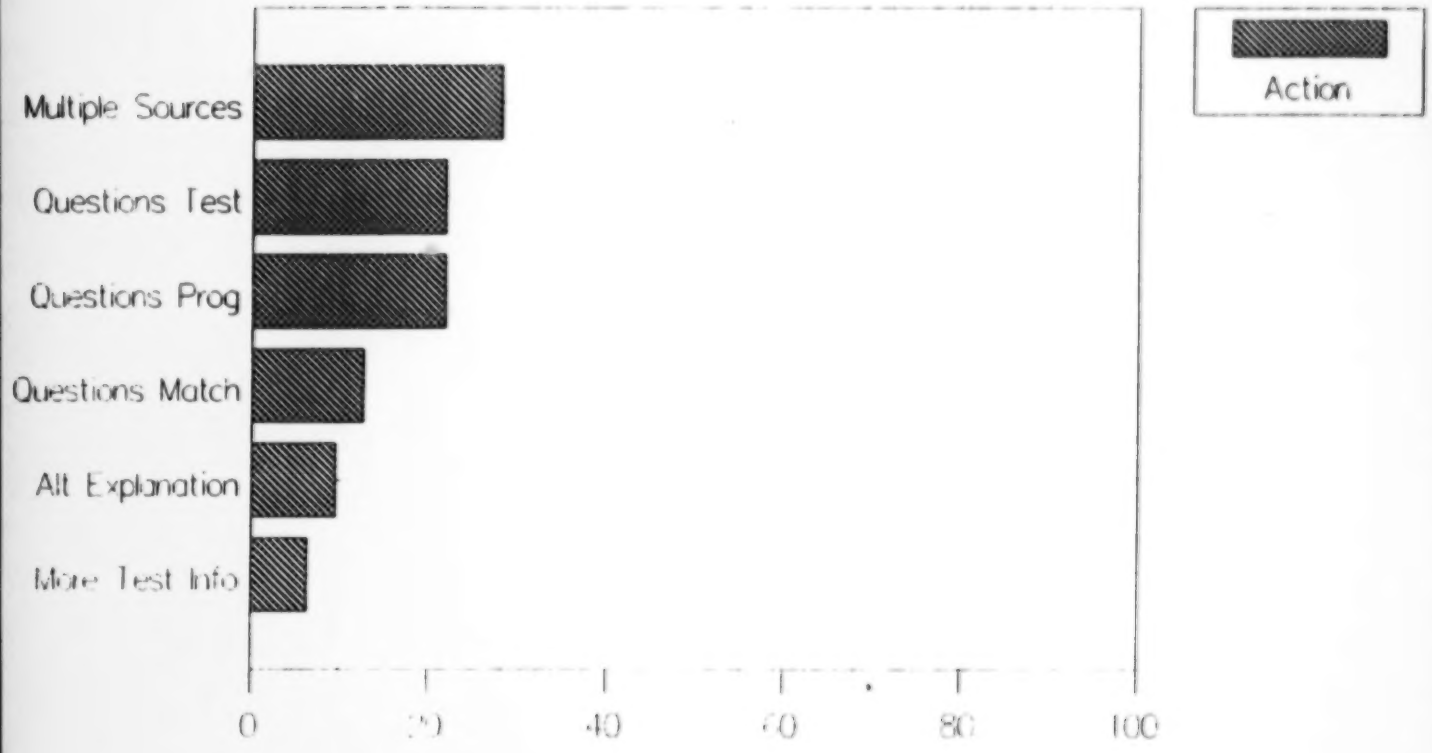
School Principals



GRAPH 5

Discrepancy Handling

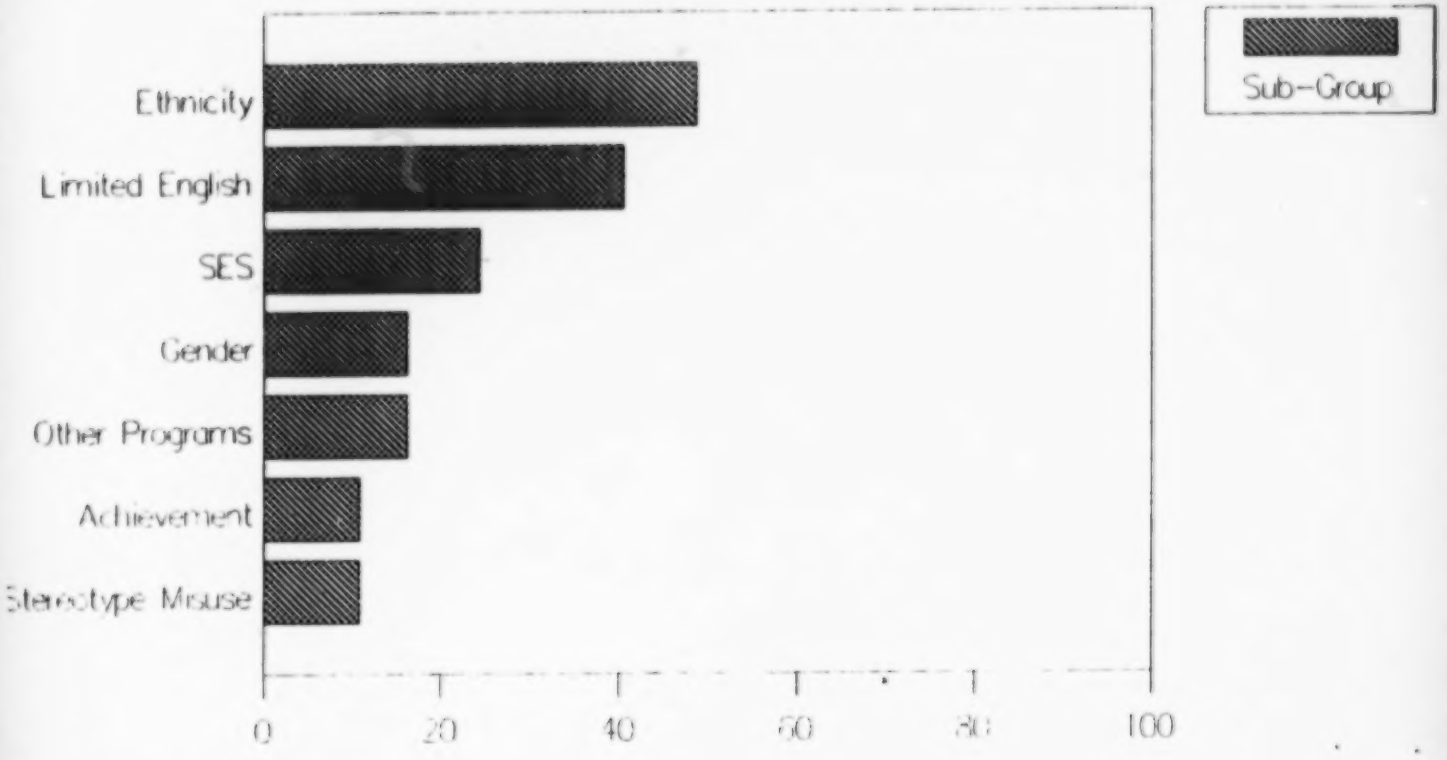
School Principals



GRAPH 6

Interest in Sub-Group Differences

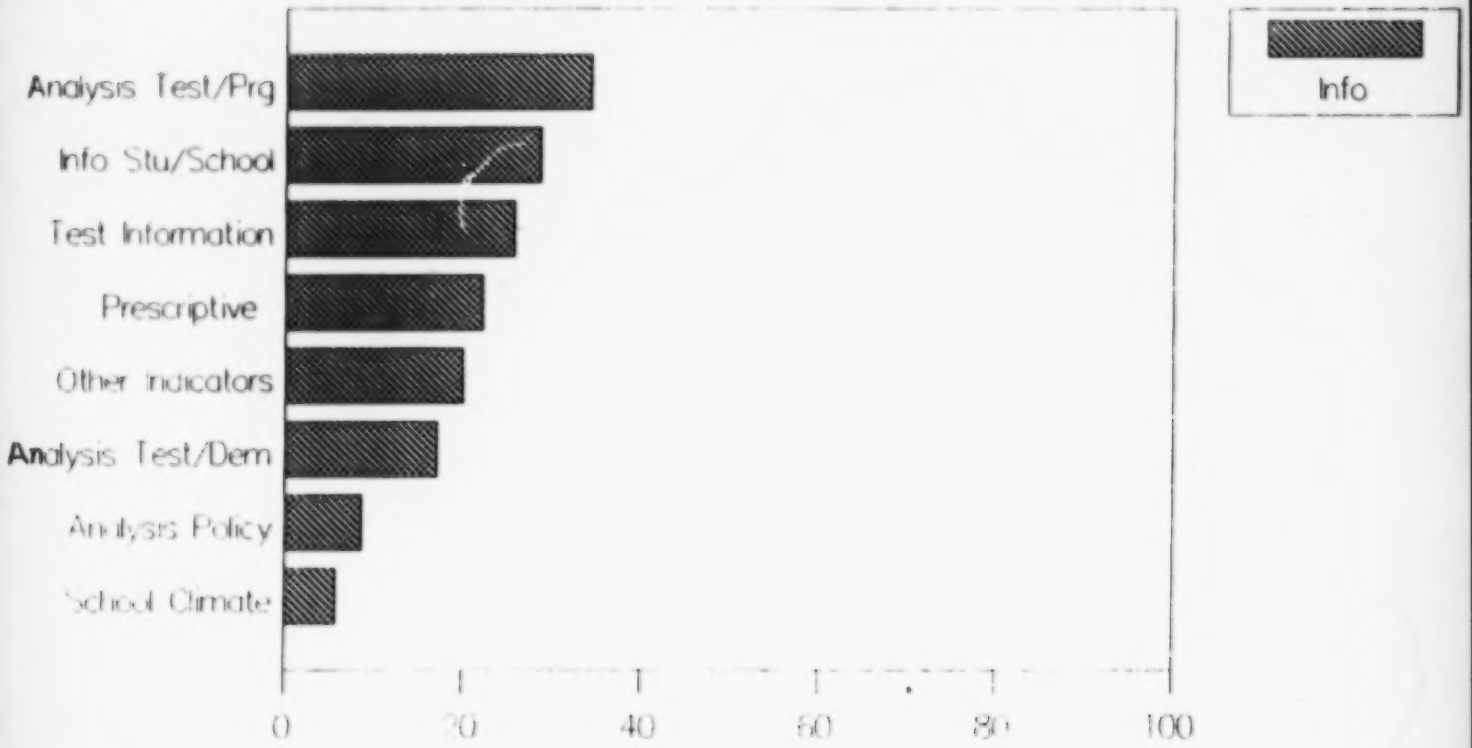
School Principals



GRAPH 7

Additional Information

School Principals



GRAPH 8

Data Presentation Preferences

School Principals